## AMENDMENT

**In the claims:**

Please cancel claims 1 and 5-7, entirely without prejudice and without disclaimer, as drawn to non-elected inventions.

Please amend the claims as follows:

1. (Cancelled)

2. (Currently Amended) An isolated nucleic acid molecule comprising SEQ ID NO:4 ~~or SEQ ID NO:6~~.

3. (Currently Amended) An isolated nucleic acid molecule comprising a nucleotide sequence encoding the amino acid sequence shown in SEQ ID NO:5 ~~or SEQ ID NO:7~~.

4. (Currently Amended) An isolated nucleic acid expression vector that expresses the amino acid sequence shown in SEQ ID NO:5 ~~or SEQ ID NO:7~~.

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (New) The isolated nucleic acid expression vector of claim 4, wherein said nucleic acid expression vector comprises the nucleotide sequence of SEQ ID NO:4.

9. (New) A host cell comprising the nucleic acid expression vector of claim 4.

10. (New) The host cell of claim 9, wherein said nucleic acid expression vector comprises the nucleotide sequence of SEQ ID NO:4.

## RESPONSE

### I. Sequence Rules

The Examiner alleges that "pages 2-3 and 17-18 need to be amended" because "this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 because 37 CFR 1.821 (a)(2)(c-d) states that *each sequence disclosed must appear separately* in the 'Sequence listing' and *in the text of the description* and claims whenever described" (the Requirement at page 2, emphasis in original). Applicants first point out for the record that there is no such section of the Code of Federal Regulations ("C.F.R.") as "37 C.F.R. 1.821 (a)(2)(c-d)". Applicants therefore assume that the Examiner is referring to 37 C.F.R. § 1.821(c) and (d), which states in part that "(e)ach sequence disclosed must appear separately in the 'Sequence Listing'", and that "(e)ach sequence set forth in the 'Sequence Listing' must be assigned a separate sequence identifier" (37 C.F.R. § 1.821(c)), and that "(w)here the description or claims of a patent application discuss a sequence that is set forth in the 'Sequence Listing' in accordance with paragraph (c) of this section, reference must be made to the sequence by use of the sequence identifier" (37 C.F.R. § 1.821(d)). Applicants point out that each sequence in the present application "appear[s] separately in the 'Sequence Listing'", and has been "assigned a separate sequence identifier". Furthermore, Applicants point out that every "sequence that is set forth in the 'Sequence Listing'" in "the description or claims" of the specification as originally filed is referred to "by use of the sequence identifier". Thus, Applicants respectfully submit that the specification as originally filed and the Sequence Listing are in **full** compliance with all applicable sections of 37 C.F.R., including 37 C.F.R. § 1.821(c) and (d).

Second, Applicants can find no support whatsoever for the Examiner's demand that "pages 2-3 and 17-18 need to be amended", either in the sections of the Code of Federal Regulations cited by the Examiner ("37 CFR 1.821 through 1.825", the Requirement at page 2), or the sections of the Manual of Patent Examining Procedure ("MPEP") cited by the Examiner ("MPEP 2422 & 2431", the Requirement at page 2). The Examiner appears to believe that the specification needs to be amended because "it is unclear what exactly each SEQ ID NO represents, including what DNA sequence encodes what protein

sequence" (the Requirement at page 2). However, this statement is belied by the Requirement itself, in that "what DNA sequence encodes what protein sequence" is correctly set forth by the Examiner himself in the Group II through VIII inventions (see Section II, below). Thus, Applicants are confused as to what exactly "is unclear". Nevertheless, in an attempt to provide the clearest possible guidance with regard to the presently elected invention (see Section III, below), Applicants state for the record that the nucleotide sequence set forth in SEQ ID NO:4 encodes the amino acid sequence set forth in SEQ ID NO:5.

Therefore, as the specification as originally filed and the Sequence Listing are in **full** compliance with all "the requirements for sequence compliance" (the Requirement at page 2), Applicants submit that this is a full and complete response to "the requirements for sequence compliance". Should the Examiner maintain his position that the specification as originally filed and the Sequence Listing do not meet "the requirements for sequence compliance", Applicants respectfully request **specific** guidance as to how the specification as originally filed and the Sequence Listing do not meet "the requirements for sequence compliance", along with **specific** support from the C.F.R. or the MPEP for any corrections alleged to be required.

A response to the "restriction requirement" (the Requirement at page 2) is set forth in detail below.

## II. Restriction Requirement

The Examiner has determined that the original claims are directed to seven separate and distinct inventions under 35 U.S.C. § 121, as follows:

Group I: Claim 1, said to be drawn to a nucleic acid expression vector that encodes SEQ ID NO:2, classified in class 435, subclass 320.1;

Group II: Claims 2-4 (in part), said to be drawn to the nucleic acid molecule of SEQ ID NO:4 that encodes the protein of SEQ ID NO:5, classified in class 536, subclass 23.5;

Group III: Claims 2-4 (in part), said to be drawn to the nucleic acid molecule of SEQ ID NO:6 that encodes the protein of SEQ ID NO:7, classified in class 536, subclass 23.5;

Group IV: Claims 5-7 (in part), said to be drawn to the nucleic acid molecule of SEQ ID NO:9 that encodes the protein of SEQ ID NO:10, classified in class 536, subclass

23.5;

Group V: Claims 5-7 (in part), said to be drawn to the nucleic acid molecule of SEQ ID NO:11 that encodes the protein of SEQ ID NO:12, classified in class 536, subclass 23.5;

Group VI: Claims 5-7 (in part), said to be drawn to the nucleic acid molecule of SEQ ID NO:13 that encodes the protein of SEQ ID NO:14, classified in class 536, subclass 23.5; and

Group VII: Claims 5-7 (in part), said to be drawn to the nucleic acid molecule of SEQ ID NO:15 that encodes the protein of SEQ ID NO:16, classified in class 536, subclass 23.5.

## III. Response to Restriction Requirement

In response to the Restriction Requirement, Applicants hereby elect without traverse to prosecute the claims of the Group II invention (claims 2-4, in part), drawn to the nucleic acid molecule of SEQ ID NO:4 that encodes the protein of SEQ ID NO:5, classified in class 536, subclass 23.5. Accordingly, claims 1 and 5-7 have been cancelled herein without prejudice and without disclaimer, as drawn to non-elected inventions. Additionally, claims 2-4 have been amended herein to remove reference to a non-elected invention.

Applicants reserve the right to refile claims to the non-elected inventions in one or more future applications retaining the priority date of the present case and the earlier cited priority applications.

## IV. Status of the Claims

Claims 1 and 5-7 have been cancelled without prejudice and without disclaimer as being drawn to non-elected inventions. Claims 2-4 have been amended to remove reference to the non-elected Group III invention, without prejudice and without disclaimer. New claims 8-10 have been added.

Claims 2-4 and 8-10 are therefore presently pending in the case.

## V. Support for the Amended and Newly Added Claims

Claims 2-4 have been amended to remove reference to the non-elected Group III invention.

Claim 8 has been added to specifically recite an isolated nucleic acid expression vector comprising the nucleotide sequence of SEQ ID NO:4. Support for this claim can be found throughout the specification as originally filed.

Claims 9 and 10 have been added to specifically recite host cells comprising certain nucleic acid expression vectors of the present invention. Support for these claims can be found throughout the specification as originally filed, with particular support being found at least at page 15, lines 25-31.

It will be understood that no new matter is included within the amended or newly added claims.

## VI. Inventorship

In response to the Examiner's reminder that, upon election of claims in response to the Restriction Requirement, inventorship must be amended in compliance with 37 C.F.R. § 1.48(b) (the Requirement at page 4), Applicants note that amendment of inventorship does **not** require "a diligently-filed petition under 37 C.F.R. § 1.48(b)" (the Requirement at page 4), but rather a request as set forth in 37 C.F.R. § 1.48(b)(1) and the processing fee as set forth in 37 C.F.R. § 1.17(i). Applicants therefore respectfully request amendment of the inventorship of the present application under 37 C.F.R. § 1.48(b)(1) in order to remove an inventor of the non-elected inventions, since her inventions are no longer being claimed in the present application as amended. The inventor *that is requested to be removed* as a result of the cancellation of the non-elected claims as a result of the response to the Restriction Requirement is Brenda Gerhardt. The inventors of the remaining claims are, therefore, Carl Johan Friddle, Erin Hilbun and C. Alexander Turner, Jr..

As set forth under 37 C.F.R. § 1.48(b)(2), the Commissioner is hereby authorized to charge the fee required under 37 C.F.R. § 1.17(i) for this amendment and request to correct inventorship to Deposit Account No. 50-0892.

## VII. Conclusion

The present document is a complete response to the Restriction Requirement. Applicants believe that the claims of the instant application meet all of the conditions for patentability and are in condition for allowance. Accordingly, an early indication of the same is respectfully requested. Should Examiner Hayes have any questions or comments, or believe that certain amendments of the claims might serve to improve their clarity, a telephone call to the undersigned Applicants' representative is earnestly solicited.

Respectfully submitted,

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Date

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